

REMARKS/ARGUMENTS

Applicant responds herein to the final Office Action dated October 4, 2007.

Claims 1, 3, 6, 7, 9, 10, and 19-21 were rejected under 35 U.S.C. §102(b) as being anticipated by Tanya et al. (sic). With respect to claims 1, 20 and 21, Taniyama et al. was cited as teaching a blocking member 31 with a plurality of nozzles 40-42 (with reference to Figs. 7-8 and 11 and column 9, line 60 - col. 10 lines 1-15 as reciting that the chemical solution is discharged from nozzle 40, water 41, gas 42 and nitrogen 44). The Examiner cited, with respect to claims 3, 6, 7 and 10, Figs. 7-8 and 11 of Taniyama et al. as anticipating the claims. With respect to claim 19, the Examiner noted that Taniyama teaches, in col. 7 lines 58-67, that the blocking member rotates.

Claims 4, 5, 8 and 9 were rejected under 35 U.S.C. §103(a) as being unpatentable over Taniyama et al. with motivation to use valves (claim 4) and a lack of innovation in the specific flow rates of claims 5, 8 and 9.

The Examiner dismissed Applicant's prior arguments that Taniyama et al. fails to anticipate an atmosphere blocking member since nozzle 31 of Taniyama does not correspond in shape and size to the holding rotating element. The Examiner said that the term "corresponds" does not positively recite that they are the same size but that "they are in agreement with each other and are parallel to, which is the case of Tanya". "Corresponding in size and shape" means just what it says. In order to effect the "atmosphere blocking" (and the extent of such blocking), the atmosphere blocking plate is defined by blocking access to the substrate by being of corresponding size and shape. A "parallel" placement, which the Examiner suggests as a reading, is without reference to any size or shape. Furthermore, the limitation of size and shape relates to the immediately preceding blocking function, whereas parallel placement (as read by the Examiner) has no real separate meaning or functional limitation.

The Examiner further noted that if the applicant amends the claims to recite shape of the blocking member it would be an obvious choice, absent evidence that the particular shape is significant. But the claims as amended and as discussed below and in the previous Response, this is not an obvious choice to shape to block atmosphere.

Independent claims 1 and 19 have indeed been amended to clearly recite and claim that the atmosphere blocking member is "substantially the same in planar shape and size" as the

substrate. Although such amendment may not be necessary, it is submitted for further clarification. Entry thereof raises no new issues in view of applicant's previous submission and is requested, especially in light of the Examiner's admission of relevance thereof, provided persuasive evidence is presented, which is here forthcoming.

The present amendment has clarified that an atmosphere blocking plate of claims 1 and 19 is a plate configured to be substantially the same in planar shape and size as a substrate. In contrast, it is apparent, from Figs. 2 and 3, that nozzle assembly 31 of Taniyama et al. is not "a plate configured to be substantially the same in planar shape and size as a substrate". Taniyama et al. fails to disclose the claim element limitation of "an atmosphere blocking plate configured to be substantially the same in planar shape and size as a substrate".

Furthermore, an atmosphere blocking plate configured to be substantially the same in planar shape and size as a substrate recited in claims 1 and 19 is not a mere modification of shape and size of nozzle assembly 31 of Taniyama et al. An atmosphere blocking plate recited in claims 1 and 19 of the present application is capable of covering an entire major surface of a substrate, since it is configured to be substantially the same in planar shape and size as a substrate, and moreover, arranged oppositely and proximately to an entire major surface of a substrate. Thus, an atmosphere blocking plate recited in claims 1 and 19 is capable of separating and blocking an outside atmosphere from an entire major surface of a substrate. In contrast, nozzle assembly 31 of Taniyama et al. is far smaller than a substrate W, which makes it absolutely impossible to cover a substrate to separate and block an outside atmosphere from it. An atmosphere blocking plate recited in claims 1 and 19 of the present invention, being configured to be substantially the same in planar shape and size as a substrate, has technical significance as stated above. Thus, an atmosphere blocking plate of the present invention and nozzle assembly of Taniyama et al. are distinctly different.

The Examiner has rejected claims 1, 3, 6, 7, 9, 10, and 19-21 under 35 U.S.C. §102(b) as being anticipated by Taniyama and, in order to find such anticipation, has read the presently claimed element of "atmosphere blocking member" as being met by Taniyama's nozzle 31. This reading and characterization of nozzle 31 is both physically and functionally contradicted by Taniyama.

A nozzle, physically distanced from a substrate such as nozzle 31, and of the small size shown in Figures 2 and 3 of Taniyama, does not, cannot, and is not intended to block any atmosphere access to the substrate (air or other gases and vapors simply unimpededly flow around the very small nozzle even with it being swivelled into different positions). In fact, Taniyama does not require or even want an atmosphere blocking effect since a basic function of Taniyama would not be effective or even possible if there would be "atmosphere blocking". The drying steps S5 and S11 of Figure 12 of Taniyama specifically require evaporation **while the nozzle is in position** (column 9, lines 32-54):

"...The three-way valve 36 of line tubes 35 and 37 is opened, and a mixture gas (first dry gas) of IPA vapor and N2 gas is supplied to the nozzle assembly 31. The first (sic) dry gas is applied from the discharge port 42 to the wafer W, thus drying the wafer W (step S5). The drying step for the wafer W may be finished in this step S5 alone. It is preferable, however, to apply dry N2 gas (second dry gas) to the wafer W in the next step S6. Since IPA vapor contains particles of carbon, etc., the particles remaining on the surface of the wafer W are removed by the additional drying step using only N2 gas, following the drying step using the mixture gas of IPA vapor and N2 gas. In this case, if the N2 gas is preheated, even if IPA component remains on the surface of the wafer W, **the remaining IPA component can be evaporated** and removed by the heat of the N2 gas. It is preferable that the N2 gas in this case be preheated at a temperature higher than the boiling point of IPA vapor.

If the primary drying step using IPA vapor and the secondary drying step using dry N2 gas (final drying) are combined, the surface of the wafer W can be completely dried. **In the above steps S3 to S6, the nozzle assembly 31 stays at a fixed position above the wafer W...**"

If Taniyama's nozzle assembly 31 were "atmosphere blocking" as applicant's claims require, evaporation would not be possible or not viable for drying. Clearly, nozzle 31 which is required to remain in position during evaporation is not even inherently an atmosphere blocking element.

It is noted in this regard that the present invention requires spin drying and not evaporative drying. There is thus, contrary to the Examiner's presumption, a critical operative function which is dependent on the function of size and shape. Thus, should Taniyama's nozzle 31 be changed in size and shape as in claim 1, "to be substantially the same in planar size and shape as said substrate, the functionally required steps of evaporative drying in Taniyama would

be precluded by the blocking plate and accordingly such modifications is taught away from by Taniyama and would not be used by or be obvious to one skilled in the art. Accordingly, Taniyama is not an anticipation of the presently claimed invention nor would it be modified to provide the presently claimed invention. Claims 1 and 19 are thus neither anticipated nor rendered obvious by the Taniyama reference.

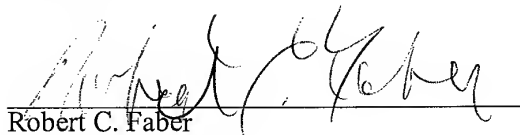
Claims 3, 6, 7, 9, 10, 20 and 21 are not anticipated for at least the reasons recited with respect to claims 1 and 19.

Claims 4, 5, 8 and 9 are further patentably distinct from Taniyama for at least the reasons cited with respect to claims 1 and 19.

Accordingly, the Examiner is respectfully requested to reconsider the application, allow the claims as amended and pass this case to issue.

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Respectfully submitted,



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